Soviets Solve Fiber-Optic Pilot Manufacturing Problems (S-NOFORN-WNINTEL)

(S-NOFORN-WNINTEL-NOCONTRACT) Recent evidence suggests that the Soviets have solved their optical-fiber manufacturing problems at the pilot production level. Multimode optical fiber is now being drawn in long lengths at pilot production facilities of the Scientific Research Institute of the Cable Industry (VNIIKP) in Moscow. VNIIKP nominal 1.3-μm multimode fiber, which is shipped at 0.6 dB/km and installed at 0.7 dB/km, is being adopted as the Soviet communications standard for trunkline cable.* VNIIKP reportedly can also now draw long lengths of competitive single-mode fiber, but additional details are not available.

Comment--Dr. G. Wilson/FSTC, AIFRTA/804-296-5171, X427, or AUTOVON 274-7427: (S-NOFORN-WNINTEL) As recently as 1985 and 1986, there were no signs that the Soviets could commercially produce anything more than multimode optical fiber of moderate lengths with losses on the order of 3 to 5 dB/km, whereas competitive commercial Western fiber was mostly single-mode, shipped at 0.4 dB/km and installed at 0.5 dB/km. Until recently, the Soviets could produce only relatively short lengths of low-loss fiber under essentially laboratory conditions, and then only in very small quantities. This situation has continued to exist despite the fact that the Soviets have understood their manufacturing problems for a long time. This improvement of performance apparently can be attributed, at least in part, to VNIIKP's increased support and autonomy, both of which were brought about under Gorbachev's reform program.

(S-NOFORN-WNINTEL) VNIIKP is believed to be a pilot plant in Gorbachev's perestroika program, and the appointment of S. G. Akopov to head the fiber-optics department at VNIIKP is a result of these reforms. Akopov began working at VNIIKP in 1981 in the superconductivity department, but he was transferred to the fiber-optics department in 1983. Shortly thereafter, he became the head of the glass-drawing laboratory. In 1986, employees of the fiber-optics department elected him head of that department; this procedure of electing department heads is a direct result of Gorbachev's reform initiatives. Although Akopov's competence as an engineer is considered marginal by many Western sources, he apparently has good management and negotiating skills and an easygoing managerial style. Currently, Akopov is interested in test methods such as those used by Western firms during manufacturing and in the instrumentation employed in materials analysis. His inquiries in these areas are most likely related to the development of quality-control measures for use in full-scale manufacturing and installation of optical fiber.

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*(U) This new information changes assessments published in DST-1740S-036-87-SUP 7, Low-Energy Laser Applications--USSR, Supplement 7, dated 15 October 1987.

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(S-NOFORN-WNINTEL) The election of Akopov is only one of several changes at VNIIKP resulting from reform. VNIIKP is the head organization for the Fiber-Optic Interbranch Scientific and Technical Complex (MNTK "Svetovod"). As such, the director of VNIIKP, I. B. Peshkov, can bypass the Ministry of the Electrical Equipment Industry (to which VNIIKP is subordinate) to do his own purchasing for VNIIKP and to initiate and undertake development programs at VNIIKP. More significantly, as head of the MNTK, Peshkov is in charge of the development and production of fiber-optic cable and is responsible for marketing the cable. In this capacity, Peshkov's authority cuts across traditional lines of authority. This increased autonomy, also the result of perestroika, is intended to ensure the rapid deployment of new technology. The Soviets are obviously planning to progress rapidly to full-scale manufacture of this cable.

(S-NOFORN-WNINTEL) Solving their manufacturing problems at the pilot production level is not tantamount to full-scale production and does not automatically lead to the installation of optical cable competitive with that of the West. Given past Soviet experience in the deployment of new technology, it could be many years before large-scale manufacturing benefits are seen. However, Gorbachev's reform measures are intended to correct such problems as the inability to move new technology from the laboratory to the industrial/manufacturing sector. Therefore, the speed with which large quantities of Soviet-produced cable is installed (and subsequent benefits derived) may be one measure of the success of Gorbachev's efforts. Success in this venture will ultimately be reflected in military communications and command-and-control systems. If these efforts do indeed bear fruit, they may be offered, whether or not actually justified, as a "showcase" demonstrating the success of Gorbachev's reform program. (DECL OADR)

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